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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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*Ex parte* TIMOTHY J. O'BRIEN, LOWELL J. UNDERWOOD, JOHN BEARD, and KAZUSHI SHIGEMASA

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Appeal 2009-013515
Application 10/652,846
Technology Center 1600

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Decided: December 1, 2009

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Before DONALD E. ADAMS, FRANCISCO C. PRATS, and STEPHEN WALSH, *Administrative Patent Judges*.

ADAMS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal under 35 U.S.C. § 134 involves claims 52-55, the only claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

## STATEMENT OF THE CASE

The claims are directed to an isolated DNA. Claim 52 is representative:

> 52. An isolated DNA that differs from nucleic acid sequence of SEQ ID NO: 6 due to inclusion of an intron sequence between exon 2 and exon 3 of SEQ ID NO: 6, said DNA encoding a TADG-14 protein variant with an amino acid sequence shown in SEQ ID NO: 75.

Claims 53-55 depend directly or indirectly from claim 52.

The Examiner relies on the following evidence:

Mitsui et al., *A novel form of human neuropsin, a brain-related serine protease, is generated by alternative splicing and is expressed preferentially in human adult brain*, 260 EUR. J. BIOCHEM. 627-34 (1999).

The rejection presented by the Examiner follows:

Claims 52-55 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Mitsui.

We reverse.

## ISSUE

Have Appellants established that Mitsui does not teach a DNA sequence that differs from SEQ ID NO: 6 due to the inclusion of an intron sequence between exon 2 and exon 3 are required by Appellants' claim 52?

## FINDINGS OF FACT

FF 1. The sequence of Appellants' SEQ ID NO: 6 is reproduced below:

```
ctgtagcagg cagagcttac caagtctctc cgaactcaaa tggaagaaat accttatgaa    60
tgtaagaatg taggggggtca tggcttgtaa tttacacagt gtaaatgaaa ccatcctaga   120
ggattatgag gaatcctttc tatgtgattt tcaatcatag caagcaagaa aggctccagt   180
gtcaaggtag ttcagctctt acaggatata aaacagtcca tacttgagag aaaaaactta   240
gatcttgagtg atggaatgtg aagcaaatct ttcaaaatca gtagacattt cttggacata   300
aaacacagat gaggtaaaggc ttcaaatttn gnagttacgt aatcaccatc agaaagttca   360
tgtttggtaa attctgttac tagaaatgta ggaaattcag gtatagcttt gaatcccaat   420
tacacattgg tcagtgggaa aactaagggc ctccaacagg caaattcagg gaggataggt   480
ttcagggaat gccctggatt ctggaagacc tcaccatggg acgcccccga cctcgtgcgg   540
ccaagacgtg gatgttcctg ctcttgctgg ggggagcctg ggcaggacac tccagggcac   600
aggaggacaa ggtgctgggg ggtcatgagt gccaacccca ttcgcagcct tggcaggcgg   660
ccttgttcca gggccagcaa ctactctgtg gcggtgtcct tgtaggtggc aactgggtcc   720
ttacagctgc ccactgtaaa aaaccgaaat acacagtacg cctgggagac cacagcctac   780
agaatataaga tggcccagag caagaaatac ctgtggttca gtccatccca caccctgct   840
acaacagcag cgatgtggag gaccacaacc atgatctgat gcttcttcaa ctgcgtgacc   900
aggcatcccct ggggtccaaa gtgaagccca tcagcctggc agatcattgc acccagcctg   960
gccagaagtg cacggtctca ggctgggcca ctgtcaccag tcccgagagg aatttttcctg 1020
acactctcaa ctgtgcagaa gtaaaaatct ttcccagaaa gaagtgtgag gatgcttacc 1080
cggggcagat cacagatggc atggtctgtg caggcagcag caaaggggct gacacgtgcc 1140
agggcgattc tggaggcccc ctggtgtgtg tatggtgcact ccagggcatc acatcctggg 1200
gctcagaccc ctgtggggag tccgacaaac ctggcgtcta taccaacatc tgccgctacc 1260
tggactggat caagaagatc ataggcagca agggctgatt ctaggataag cactagatct 1320
cccttaataa actcacaact ctctgaaaaa aaaaaaaaaa                        1360
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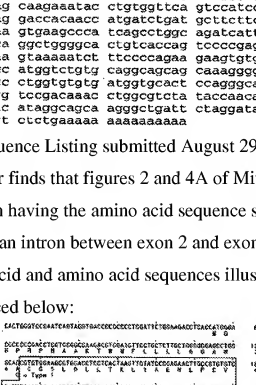
(*See* Appellants' Sequence Listing submitted August 29, 2003.)

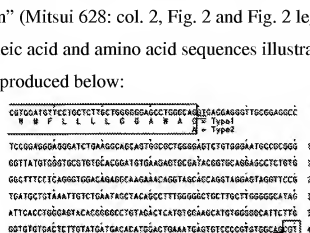
FF 2. The Examiner finds that figures 2 and 4A of Mitsui teach a DNA that encodes a protein having the amino acid sequence shown in SEQ ID NO: 75 and includes an intron between exon 2 and exon 3 (Ans. 3).

FF 3. The nucleic acid and amino acid sequences illustrated in Mitsui's Figure 2 are reproduced below:



Mitsui's Fig. 2 illustrates "[t]he nucleotide and amino acid sequences of human neuropsin" (Mitsui 628: col. 2, Fig. 2 and Fig. 2 legend).

FF 4. The nucleic acid and amino acid sequences illustrated in Mitsui's Figure 4A are reproduced below:




Mitsui's Fig. 4 illustrates nucleotide and amino acid sequences human neuropsin, wherein "[t]he exons and deduced amino acid sequences are boxed. 5' and 3' consensus dinucleotides of [the] intron [are] . . . double-underlined" and "[t]he 3' spice site of human type 1 neuropsin [is] . . . indicated by an arrow" (Mitsui 630: col. 1, Fig. 4A and Fig. 4A legend).

## PRINCIPLES OF LAW

On appeal to this Board, Appellants must show that the Examiner has not sustained the required burden of demonstrating unpatentability. *See Ex*

*parte Yamaguchi*, 88 USPQ2d 1606, 1608 and 1614 (BPAI 2008) (precedential).

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros., Inc. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987).

## ANALYSIS

Claim 52 is drawn to an isolated DNA. The claimed DNA encodes a TADG-14 protein variant with an amino acid sequence shown in SEQ ID NO: 75 (Claim 52).

We are not persuaded by the Examiner's assertion that Appellants' "claim 52 recites an isolated DNA that *differs* from nucleic acid sequence of SEQ ID NO: 6, not an isolated DNA sequence comprising the nucleotide sequence as set forth in SEQ ID NO: 6" (Ans. 4). Claim 52 requires the claimed DNA to differ from the nucleic acid sequence of SEQ ID NO: 6 *only* by (i.e., "due to") including an intron sequence between exon 2 and exon 3 of SEQ ID NO: 6 (Claim 52).

While claim 52 does not require the intron to have a specific sequence, claim 52 does require the presence of all the nucleotides present in SEQ ID NO: 6 arranged in the same order, but for the inclusion of an intron between exon 2 and exon 3 (Claim 52).

SEQ ID NO: 6 has a defined arrangement of nucleotides (*see* FF 1). The claim requires that the arrangement of nucleotides set forth in SEQ ID NO: 6 be modified only by the inclusion of an intron sequence between exon 2 and exon 3. The Examiner has not identified, and we do not find, a

teaching in Mitsui of a sequence that differs from the sequence set forth in SEQ ID NO: 6 only by the inclusion of an intron sequence between exon 2 and exon 3 (*see also* App. Br. 9 (Mitsui does "not teach the DNA sequence that differs from SEQ ID NO:6 due to the inclusion of an intron sequence between exon 2 and exon 3 as recited in Applicants' claim 52")).

We recognize the Examiner's assertion that "the nucleic acid sequence of Mitsui encodes a protein with an amino acid sequence 100% identical to the claimed sequence shown in [Appellants'] SEQ ID NO: 75" (Ans. 4). While this may be true, the claim is not directed to an amino acid sequence, but instead is drawn to a specific nucleotide sequence (Claim 52).

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d at 631. Accordingly, the Examiner had the burden of establishing that Mitsui's nucleotide sequence is the same as Appellants' claimed DNA. The Examiner has not met this burden on this record.

## CONCLUSION OF LAW

Appellants have established that Mitsui does not teach a DNA sequence that differs from SEQ ID NO: 6 due to the inclusion of an intron sequence between exon 2 and exon 3 are required by Appellants' claim 52. The rejection of claims 52-55 under 35 U.S.C. § 102(b) as being anticipated by Mitsui is reversed.

## REVERSED

cdc

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